

OperationQuadratic Formula

$$X_{1,2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

QUAD

Use

a) Calling Linkage

L : 100 8 L+2 3ff 35f
 L + 1: / 5 / / QUAD:1
 L + 2: 0 SQR:1 } a[} Xr, [β

b) Adaptation Link Word

L + 2: 02a 1WL 02a β

c) Storage

j = 42 words

k = 42 orders

0 constants

6 opstos: 35a to 35f (shared with SQR)

Requirements and Performance

a) Method of operation Floating point ; algebraic solution

b) Additional routines required SQR

c) Range and form of variable a, b, c normalized & stored in sequential locations -

d) Accuracy $X_{r1}, X_{j1}; X_{r2}, X_{j2}$ stored sequentially.
 $X_{j1} = X_{j2} = 0$ for "real" answers.

e) Performance time ~ 1.75 sec (inc. SQR)

Note: if $a = 0$, routine halts (02a) - if "RUN" is pushed $X_{j1} = X_{j2} = 0; X_{r1} = X_{r2} = -\frac{c}{b}$